

CLAIMS

We claim:

1. A drive device for a light-emitting component comprising:

- a reference source, which generates a current specification signal specifying a desired current through the light-emitting component,
- a current mirror circuit, which generates a load current equal to a fraction of an actual current through the light-emitting component, and
- a regulating device having a first input and a second input, the first input being coupled to the current mirror circuit and the second input being coupled to the reference source, the regulating device generating a regulation signal that regulates the actual current through the light-emitting component in such a way that a difference between the desired current and the actual current is minimized.

2. The drive device as claimed in claim 1, wherein the current mirror circuit comprises:

- a first transistor, which generates a mirror current that is proportional to the actual current through the light-emitting component, and
- a current mirror comprising a second transistor and a third transistor respectively generating a reference current and said load current, the reference current of the current mirror being formed by the mirror current generated by the first transistor, and the load current of the current mirror being fed to the first input of the regulating device.

3. The drive device as claimed in claim 2, wherein the actual current through the light-emitting component is provided by a control transistor,

wherein the control terminal of the control transistor is connected to an output of the regulating device, and

wherein the control terminal of the first transistor of the current mirror circuit is also connected to the output of the regulating device.

4. The drive device as claimed in claim 2, wherein the current mirror circuit comprises:

- a first NPN transistor, the base terminal of which is connected to the regulating device and the emitter terminal of which is grounded,
- a first PNP transistor, the base terminal and the collector terminal of which are connected to the collector terminal of the first NPN transistor and the emitter terminal of which is connected to a positive supply voltage, and
- a second PNP transistor, the base terminal of which is connected to the base terminal of the first PNP transistor, the emitter terminal of which is connected to the positive supply voltage and the collector terminal of which is connected to the first input (21) of the regulating device.

5. The drive device as claimed in claim 1, further comprising a switch for selectively connecting the load current generated by the current mirror circuit to the first input of the regulating device.

6. The drive device as claimed in claim 5, wherein the switch comprises a MOS transistor.

7. The drive device as claimed in claim 1, wherein the current mirror circuit includes means for feeding a temperature-dependent current to the first input of the regulating device in such a way that a temperature response of the light-emitting component is at least partially simulated.

8. The drive device as claimed in claim 7, wherein the current mirror circuit comprises at least first and second resistors which have different temperature dependencies.

9. The drive device as claimed in claim 4, wherein the emitter terminals of the first and second PNP transistors are respectively connected to the positive supply voltage via first and second resistors, the first and second resistors having different temperature dependencies.

10. The drive device as claimed in claim 8, the current mirror circuit having circuit means for selectively connecting further resistors for the purpose of generating different temperature dependencies.

11. The drive device as claimed in claim 9, wherein the further resistors are selectively connected in parallel by the circuit means, with at least one resistor arranged between the emitter terminal of one of the first and second PNP transistors and the supply voltage.

12. The drive device as claimed in claim 1, further comprising a correction device, the correction device including means for compensating for a temperature-dictated error of the current mirror circuit by modifying in a temperature-dependent manner the current specification signal generated by the reference source.

13. The drive device as claimed in claim 1, further comprising a monitor diode and changeover means for selectively connecting the monitor diode to the first input of the regulating device, whereby the changeover means selectively passes one of the load signal of the current mirror circuit and an output signal of the monitor diode to the first input of the regulating device.

14. A drive device for a controlling an actual current transmitted through a light-emitting component, the drive device comprising:

a control transistor connected in series with the light-emitting component between a high voltage source and a low voltage source;

a reference source for generating a current specification signal corresponding to a desired current to be transmitted through the light-emitting component;

a current mirror circuit, connected between the high voltage source and the low voltage source, for generating a load current that is equal to a portion of the actual current transmitted through the light-emitting component; and

a regulating device having a first input terminal connected to receive the current specification signal, a second input terminal connected to receive the load current generated by the current mirror circuit, and an output terminal connected to a control terminal of the control transistor,

wherein the regulating device includes means for generating a regulation signal on the output terminal based on a difference between the load current and the current specification signal.

15. The drive device of Claim 14, wherein the current mirror circuit comprises:

a first transistor having an emitter connected to the low voltage source, and a control terminal connected to the output terminal of the regulating device; and

a current mirror including:

a second transistor having an emitter connected to the high voltage source, the second transistor also having a collector and a control terminal connected to a collector of the first transistor, and

a third transistor having an emitter connected to the high voltage source, a collector connected to the first

input terminal of the regulating device, and a control terminal connected to the collector of the first transistor.

16. The drive device of Claim 15, wherein the current mirror further comprises:

a first resistor connected between the high voltage source and the collector of the second transistor; and

a second resistor connected between the high voltage source and the collector of the third transistor,

wherein the first and second resistors have different temperature dependencies.

17. The drive device of Claim 14, wherein the regulating device comprises an operational amplifier.

18. A drive device for a controlling an actual current transmitted through a light-emitting component, the drive device comprising:

a control transistor connected in series with the light-emitting component between a high voltage source and a low voltage source;

means for generating a current specification signal corresponding to a desired current to be transmitted through the light-emitting component;

a current mirror circuit comprising:

a first transistor having an emitter connected to the low voltage source, and a control terminal connected to the output terminal of the regulating device; and

a current mirror including:

a second transistor having an emitter connected to the high voltage source, the second transistor also

having a collector and a control terminal connected to a collector of the first transistor, and
a third transistor having an emitter connected to the high voltage source, and a control terminal connected to the collector of the first transistor; and
means for generating a regulation signal based on a difference between a load current transmitted from a collector of the third transistor and the current specification signal, wherein the regulation signal is transmitted to a control terminal of the control transistor.

19. The drive device of Claim 18, wherein the current mirror further comprises:

a first resistor connected between the high voltage source and the emitter of the second transistor; and

a second resistor connected between the high voltage source and the emitter of the third transistor,

wherein the first and second resistors have different temperature dependencies.

20. The drive device of Claim 18, wherein said means for generating the current specification signal comprises a reference generator for generating a first signal, and a correction device for generating the current specification signal by selectively modifying the first signal using a temperature-dependent value.